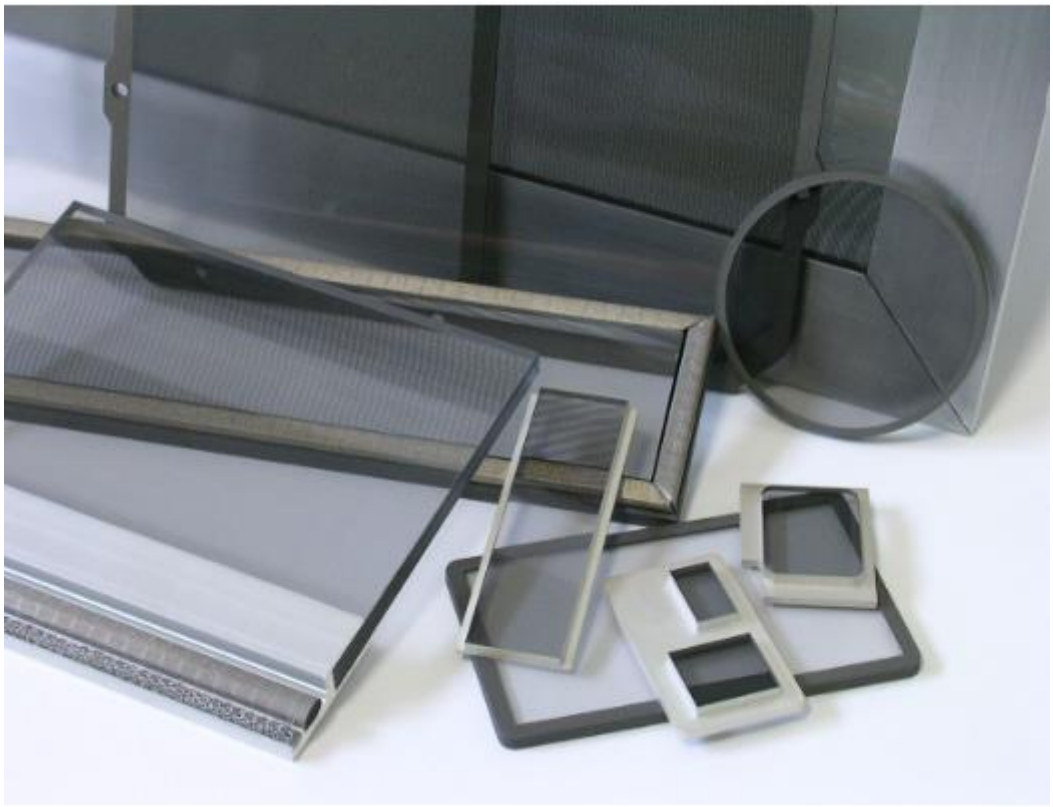
EMI and EMC Shielding Solutions for Compliance-Driven Electronic Systems

Purpose and Scope

Electromagnetic Interference (EMI) and Electromagnetic Compatibility (EMC) shielding are essential for the reliable operation of electronic systems exposed to complex electromagnetic environments. This document outlines EMI and EMC shielding solutions and products designed to control emissions, improve immunity, and support regulatory compliance in professional and industrial applications.



EMI and EMC Design Principles

Effective EMI shielding reduces radiated and conducted interference through reflection, absorption, and controlled grounding. EMC-compliant design requires continuous electrical contact across enclosure interfaces while maintaining mechanical integrity. Shielding solutions must retain performance under vibration, thermal cycling, compression, and environmental stress. Discontinuities or material degradation can significantly reduce shielding effectiveness and lead to non-compliance.

Shielding Product Solutions

Ghiringhelli Mario offers a range of EMI and **EMC shielding products** for electronic enclosures and system interfaces. Conductive gasket solutions include fabric-over-foam, metallized elastomers, wire mesh gaskets, and ultra-soft profiles. These components ensure consistent

electrical continuity across seams while accommodating assembly tolerances and repeated installation cycles.

Transparent EMI Shielding Solutions

Shielding windows manufactured from glass, polycarbonate, and acrylic substrates provide optical transparency combined with electromagnetic attenuation. These solutions are designed for displays, control panels, and inspection interfaces where visual access is required without compromising shielding performance across defined frequency ranges.

Conductive Films and Meshes

Conductive films and wire meshes provide lightweight, space-efficient shielding for panels, housings, and display assemblies. Material selection is based on surface resistivity, frequency response, corrosion resistance, and compatibility with bonding systems.

Compliance and Applications

All solutions are developed to support EN, IEC, MIL-STD, and FCC requirements for aerospace, defense, medical, telecommunications, automotive, and industrial electronics applications.